

# Records and observations on bats of Himalayan region of Uttar Pradesh and West Bengal, India<sup>1</sup>

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During a survey of haematophagous arthropods in the Himalayan region of Uttar Pradesh and West Bengal between November 1966 and August 1970, 362 specimens of bats were collected for ectoparasitic search. These specimens represent 15 genera and 20 species. Additional geographical and ecological ranges for some species are recorded. Notes on distribution, reproduction and general natural history are presented for some of the species.

This paper presents data on bats collected in the Himalayan region of Uttar Pradesh and West Bengal by me intermittently between November 1966 and August 1970 during a haematophagous arthropod survey. A total number of 362 specimens representing 15 genera and 20 species was collected. This included 14 of the 26 species recorded from this area in the Checklist by Ellerman & Morrison-Scott (1951), two species recorded later on (Bhat, 1967, 1968) and 4 additional species. Representative specimens of each species are preserved either as dry skins and skulls or as wet specimens in formalin.

Additional notes on distribution, reproduction and general natural history are given for some of the species.

## COLLECTION LOCALITIES

Brief description of the collection localities are given below. The altitudes in many instances are approximate. The area has diverse

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<sup>1</sup> Accepted May 15, 1972.

geographical and ecological features represented by tropical, subtropical temperate and alpine zones.

### Uttar Pradesh:

District: NAINI TAL:— 1) *Bilaspur* near Bhim Tal (1380 m), subtropical zone; 2) *Dugada* (680 m), Balya valley, tropical zone; 3) *Garjia* (460 m), Kosi valley, tropical zone; 4) *Haldwani* (430 m), below foot hills in Bhabar, tropical zone; 5) *Ramnagar* (350 m), below foot hills in Bhabar, Kosi valley, tropical zone; 6) *Ranibag* (620 m), Balya valley, tropical zone.

District: ALMORA:— 7) *Arey* (770 m), near Bageshwar, Sarju valley, tropical zone; 8) *Bageshwar* (770 m), Sarju valley, tropical zone; 9) *Chalthi* (620 m), Ladhiya valley, tropical zone; 10) *Dhakuri* (2620 m), western slope of the Dhakuri Binayak range, Pindar valley, upper temperate zone; 11) *Dwali* (2770 m), Pindar valley, temperate zone; 12) *Kapkot* (1140 m), Sarju valley, subtropical zone; 13) *Kataithbara* (770 m), near Bageshwar; 14) *Katarmal* (1380 m), near Almora, Kosi valley, lower temperate zone; 15) *Khati* (2300 m), Pindar valley, upper temperate zone; 16) *Loharkhet* (1960 m), Sarju valley, temperate zone; 17) *Phaltaniya* (770 m), near Bageshwar; 18) *Sukhidhang* (1380 m), lower temperate zone.

District: PITHORAGARH:— 19) *Aat* (920 m), near Thal, Ramganga valley, subtropical zone; 20) *Dharchula* (920 m), Kali valley, subtropical zone; 21) *Dummer* (1540 m), Gori valley, temperate zone; 22) *Girgaon* (2000 m), on southern face of Kalamundi ridge, temperate zone; 23) *Khela* (1540 m), near Tawaghat, lower temperate zone; 24) *Kotera* (920 m), near Dharchula, subtropical zone; 25) *Kuity* (1380 m), near Tejam, subtropical zone; 26) *Lilam* (2000 m), Gori valley, temperate zone; 27) *Martoli* (3380 m), Gori valley, alpine zone; 28) *Milam* (3540 m), Gori valley, alpine zone; 29) *Patet* (920 m), near Thal, Ramganga valley, subtropical zone; 30) *Tawaghat* (1140 m), Dhauri valley, subtropical zone; 31) *Tejam* (1080 m), Ramganga valley, subtropical zone; 32) *Thal* (920 m), Ramganga valley, subtropical zone.

District: PAURI:— 33) *Dalmisain* (610 m), Kho valley, tropical zone; 34) *Dungripanth* (610 m), Alakananda valley, tropical zone; 35) *Narkota* (610 m), Alakananda valley, tropical zone; 36) *Raitoli* (610 m), Alakananda valley, tropical zone; 37) *Srinagar* (550 m), Alakananda valley, tropical zone.

District: CHAMOLI:— 38) *Didoli* (770 m), near Sonla, Alakananda valley, subtropical zone; 39) *Dogalbita* (2370 m), Nagnath hill range, temperate zone; 40) *Guliyo* (1230 m), near Gopeshwar, subtropical zone; 41) *Gwaldam* (200 m), Pindar valley, temperate zone.

District: TEHRI:— 42) *Ghonti* (920 m), Bhillangana valley, sub-

tropical zone.

District: DEHRA DUN:— 43) *Dehra Dun* (610 m), tropical zone; 44) *Ramgarh* (600 m), tropical zone; 45) *Sahasradhara* (770 m), tropical zone; 46) *Sahaspur* (600 m), tropical zone; 47) *Satyanarayan* (340 m), tropical zone.

### West Bengal:

District: DARJEELING:— 48) *Tashiding* (550 m), Tista river valley, tropical zone.

District: JALPAIGURI:— 49) *Chunabhatti* (200 m), Lish river basin, tropical zone.

In addition to these localities attempts had been made to collect bats at a number of other localities, but with negative results.

## RECORDS AND NOTES ON SPECIES

### *Rousettus leschenaulti* Desmarest, 1820 (Fulvous Fruit Bat)

*Specimens collected*: Total 74 (45 ♂♂, 27 ♀♀, 2 sex unrecorded). 2 ♂♂, 3 ♀♀ (1 juvenile), *Dungripanth*, 18 May '67; 1 ♂ 1 sex unrecorded, *Narkota*, each on 20 and 21 May '67; 2 ♂♂, 1 ♀, *Raitoli*, 23 May '67; 5 ♂♂, *Dugada*, 8 Sept. '67; 1 ♂, 1 ♀, *Patet*, 11 Sept. '67; 5 ♂♂, *Tejam* 13 Sept. '67; 6 ♂♂, 9 ♀♀, *Kapkot*, 30 Sept. '67; 1 ♀ (juvenile), *Srinagar*, 24 Oct. '67; 1 ♀, *Sahasradhara*, 31 Oct. '67; 4 ♂♂, *Dalmisain*, 12 Nov. '67; 2 ♂♂, *Phaltaniya*, 6 May '68; 2 ♂♂, *Kataithbara*, 7 May '68; 2 ♀♀, *Kataithbara*, 8 May '68; 1 ♂, 2 ♀♀, *Thal*, 5 Aug. '70; 12 ♂♂, 3 ♀♀, *Thal*, 7 Aug. '70; 2 ♂♂, 4 ♀♀, 1 baby, *Aat* 9 Aug. '70.

*Notes*: Specimens were collected in mist nets set between fruit trees, mainly bananas, near the cultivations in tropical and subtropical zones. Two juveniles were collected, one each in May and October. A female collected in August was carrying a baby with eyes not yet opened. The findings indicate the possibility of two breeding seasons for the species in the present area, one each in March and August, as recorded by Brosset (1962) in Western India.

### *Cynopterus sphinx* Vahl, 1797 (Short-nosed Fruit Bat)

*Specimens collected*: Total 103 (45 ♂♂, 57 ♀♀ and 1 sex unrecorded). 2 ♀♀, *Dugada*, 25 Feb. '67; 1 ♂, 2 ♀♀, *Dugada*, 26 Feb. '67; 1 sex not recorded, *Chalthi*, 6 Mar. '67; 2 ♂♂, 1 ♀, *Dharchula*, 17 Mar. '67; 1 ♂, 3 ♀♀, *Dharchula*, 18 Mar. '67; 1 ♂, *Kotera*, 19 Mar. '67; 1 ♂, 2 ♀♀, *Kataithbara*, 23 Mar. '67; 2 ♀♀, *Arey*, 24 Mar. '67; 4 ♂♂, 3 ♂♂, *Dugada*, 8 Sept. '67; 1 ♀, *Tejam*, 13 Sept. '67; 1 ♂, *Dehra Dun*, 28 Oct. '67; 1 ♀, *Ramgarh*, 29 Oct. '67; 1 ♀, *Dalmisain*, 12 Nov. '67; 2 ♂♂, 2 ♀♀, *Dalmisain*, 13 Nov. '67; 2 ♂♂, 1 ♀, *Garjia*, one each on 16, 18 and 19 Nov. '67; 1 ♂, 3 ♀♀, *Bilaspur*

23 Nov. '67; 7 ♂♂, 3 ♀♀ and 1 ♀, Dugada, respectively on 28 and 29 Nov. '67; 2 ♀♀, Sahaspur, 2 Apr. '68; 1 ♂, 1 ♀, Didoli, 24 Apr. '68; 1 ♂, 4 ♀♀, Dugada, 3 May '68; 2 ♂♂, 1 ♀, Bageshwar, 5 Mar. '68; 5 ♂♂, 7 ♀♀, Tashiding, between 17 and 19 Mar. '69; 10 ♂♂, 13 ♀♀, Chunabhatti, between 24 and 28 Mar. '69; 2 ♂♂, 1 ♀, Dugada, 2 May '69; and 1 ♂, Thal, 5 Aug. '70.

*Notes:* Collected in mist nets set between fruit trees, mainly bananas, near cultivation in tropical and subtropical zones.

**Sphaerias blanfordi** Thomas, 1891  
(Blandford's Fruit Bat)

*Specimens collected:* Total 40 (21 ♂♂, 17 ♀♀, 2 babies and 1 sex unrecorded) in addition to 51 specimens already reported (Bhat 1968). 1 ♂, 1 ♀, Sukhidhang, 4 Mar. '67; 1 sex not recorded, Dharchula, 17 Mar. '67; 1 baby born in mist net, mother already recorded (Bhat 1968), Dummer, 25 Sept '67; 1 ♀ plus baby and 3 ♀♀, Khela, respectively on 14 and 15 May '68; 1 ♀, Tawaghat, 16 May '68; 8 ♂♂ and 2 ♀♀, 4 ♂♂, and 2 ♀♀, 2 ♂♂ and 3 ♀♀, 4 ♂♂ and 1 ♀, 1 ♂ and 1 ♀, 1 ♂ and 1 ♀, Dogalbita, respectively on 10 and 11 May '69, and 8, 9, 11, and 12 July '70.

*Notes:* Collected in mist nets set between fruit trees (mainly bananas) near cultivation and forests in subtropical and temperate zones. The presence of a baby and juveniles in September indicates the month being breeding period. Collection of one baby in May and a number of young males in July at Dogalbita indicates a possibility of having a second breeding season in May.

**Econycteris spelaea** (Dobson, 1871)  
(Dobson's Long-tongued Fruit Bat)

*Specimens collected:* Only one young male was collected from Thal on 5 May '70, since the species was first recorded in the area on the basis of 7 specimens (Bhat 1967).

*Notes:* Collected in mist net set between banana trees near cultivation in tropical and subtropical zones.

**Megaderma spasma** Linnaeus, 1758  
(Malay False Vampire)

*Specimen collected:* 1 ♂, Chunabhatti, 28 Mar. '69.

*Notes:* Collected in mist net set near the Bungalow. Recorded from this part of country for the first time.

**Megaderma Iyra** Geoffroy, 1810  
(Indian False Vampire)

*Specimens collected:* 2 ♂♂, 1 ♀, Ranibag, respectively on 26 and 27 Aug. '70.

*Notes:* These specimens were trapped at 19.30 hrs. in mist nets set at Dak Bungalow.

**Rhinolophus ferrumequinum** Schreber, 1774  
(Greater Horseshoe Bat)

*Specimen collected*: 1 ♀, Katarmal, 19 Aug. '70.

*Notes*: Trapped at 19.15 hrs. in mist net set on the door of an ancient sun-temple. The temple dome was used by the species as day roost along with *Hipposideros armiger*.

**Rhinolophus affinis** Horsfield, 1823

*Specimen collected*: 1 ♂, Bilaspur, 21 Apr. '67.

*Notes*: Trapped in mist net set between fruit trees.

**Rhinolophus rouxi** Temminck, 1835

*Specimen collected*: 1 ♀, Tashiding, 18 Mar. '69.

*Notes*: Trapped in mist net set between banana trees.

**Rhinolophus pearsoni** Horsfield, 1851

*Specimen collected*: 1 ♂, Narkota, 20 May '67.

*Notes*: Trapped in mist net set between banana trees.

**Hipposideros armiger** Hodgson, 1831  
(Great Himalayan Leaf-nosed Bat)

*Specimens collected*: 3 ♂♂, 4 ♀♀, Katarmal, 1 ♀ on 18 and rest on 19 Aug. '70.

*Notes*: 1 ♂ and 2 ♀♀ specimens were collected in mist nets set along verandah of Dak Bungalow. The bats got trapped at 19.30 hrs., while entering the verandah which was being used as night roost. 2 ♂♂ and 2 ♀♀ were trapped in mist nets on the door of the temple. The temple was being used as day roost along with *Rh. ferrumequinum*.

**Myotis siligorensis** Horsfield, 1855

*Specimens collected*: Total 22 (6 ♂♂ and 16 ♀♀). 3 ♂♂, 6 ♀♀, Dwali, 2 ♂♂ and 5 ♀♀, and 1 ♂ and 1 ♀ respectively on 4 and 5 Oct. '67; 2 ♂♂, 10 ♀♀, Dogalbita, 2 ♂♂ and 9 ♀♀, and 1 ♀ respectively on 10 and 11 May '69; and 1 ♂ on 12 Jul. '70.

*Notes*: At both the places the species was using roof crevices as day roost. The specimens were collected by trapping in mist nets while they were emerging at dusk. They were also seen while returning to the roost in the morning about 30 minutes before sunrise.

**Myotis myotis dobsoni** Trouessart, 1878  
(Large Mouse-eared Bat)

*Specimen collected*: 1 ♂, Katarmal, 18 Oct. '70.

*Notes*: Trapped in mist net while hunting near a Bungalow.

The specimens perfectly fits with the description of *Vespertilio murinus* of Blanford (1891) which is a synonym of *Myotis myotis* Borkhausen, 1797, according to Ellerman & Morrison-Scott (1951). Tate (1947) considers *Vespertilio dobsoni* Trouessart, 1878 (*Vespertilio murinoides* Dobson, 1873 and *V. blythi* of Wroughton) as a subspecies of *Myotis myotis* occurring in Himalayas. The identity of the specimen is based on the above reasons. The species is now recorded for the first time from Kumaon.

**Nyctalus leisleri montanus** Barret Hamilton, 1906  
(Hairy-armed Bat)

*Specimens collected*: Total 2. 1 ♀, Dogalbita, 8 Jul. '70; 1 ♀, Katarmal, 18 Aug. '70.

*Notes*: Trapped in mist nets set in Bungalow premises.

**Nyctalus noctula labiatus** Hodgson, 1835  
(Common Noctule)

*Specimen collected*: 1 ♂, Gwaldam, 13 Apr. '67.

*Notes*: Collected in mist net set in forest. The species has been known to occur in the adjacent areas. Recorded for the first time in the area.

**Pipistrellus mimus mimus** Wroughton, 1899  
(Indian Pigmy Pipistrelle)

*Specimens collected*: Toatl 21 (6 ♂♂ and 15 ♀♀). 3 ♂♂, 13 ♀♀, Haldwani, 1 ♂ and 9 ♀♀ and 2 ♂♂ and 4 ♀♀ respectively on 27 and 28 Nov. '67; 3 ♂♂, 2 ♀♀, Satyanarayan, one each on 29 Jun. and 2 to 5 Jul. '70.

*Notes*: All the specimens were collected either by pulling them out with forceps from wall crevices or in mist nets at dusk while emerging from their day roosts in the roof crevices. Both the collections are from the tropical zone.

**Pipistrellus babu** Thomas, 1915

*Specimens collected*: Total 5 (1 ♂ and 4 ♀♀). 1 ♂, Sukhidhang, 2 Mar. '67; 1 ♀, Srinagar, 24 Oct. '67; 3 ♀♀, Ghonti, 16 Jan. '70.

*Notes*: Collected in mist nets set in Bungalow premises at dusk. Appears to be distributed in tropical, subtropical and lower temperate zones.

**Barbastella leucomelas darjelingensis** Hodgson, 1855

*Specimen collected*: 1 ♂, Kapkot, 30 Sept. '67.

*Notes*: Trapped in mist net set in wooded bungalow premises. The species has been known to occur in the neighbouring areas, but is recorded in the present area for the first time.

**Scotophilus heathi** Horsfield, 1831  
(Greater Yellow Bat)

*Specimens collected*: Total 15 (7 ♂♂ and 8 ♀♀). 2 ♂♂, 3 ♀♀, Haldwani, 2 ♀♀ and 1 ♂ respectively on 28 and 30 Nov. '67; 1 ♂ and 1 ♀ on May '68. 5 ♂♂, 5 ♀♀, Ramnagar; 5 ♂♂ and 2 ♀♀, 2 ♀♀ and 1 ♀ respectively on 28, 29 and 30 Aug. '70.

*Notes*: Trapped in mist nets set in wooded premises of Bungalows while the bats were hunting. The species was found actively hunting within 10 feet from the ground between 19.00 to 20.00 hrs. Never met with in the hills.

**Plecotus auritus homochrous** Hodgson, 1847  
(Long-eared Bat)

*Specimens collected*: Total 3. 1 ♀, Martoli, 18 Sept. '67; 2 ♂♂, Milam, one each on 29 and 30 May '68.

*Notes*: Specimen from Martoli was caught flying inside a deserted building and those from Milam in mist nets set in the open ground. A number of specimens were observed emerging from the crevices of slate-roofs just after dusk. Never encountered in lower elevations.

ACKNOWLEDGEMENTS

I am grateful to Dr. T. Ramachandra Rao, former Director, Virus Research Centre, Poona, under whose supervision the work has been carried out. The material was collected under a scheme for the survey of haematophagous arthropods in the mountainous regions of India, financed by the Indian Council of Medical Research. The Assistance rendered by the Armed Forces Medical Services during the collection trips is gratefully acknowledged.

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